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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,366	02/25/2002	Walter Kastenhuber	50606	1346

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EXAMINER

SORKIN, DAVID L

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/069,366

Applicant(s)

KASTENHUBER ET AL.

Examiner

David L. Sorkin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-12 and 14-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3,5-12 and 14-22 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Gallo (US 1,822,867). Gallo ('867) discloses an impeller having a shaft hub 1) and a number of individual curved vanes (2) freely mounted on the hub, to create pumping spaces on the front side and rear side of the curved vanes of the impeller, wherein each of the vanes has bevels in the region where the vane is mounted on the shaft (see Fig. 2), the bevels of adjacent vanes being formed to create a surface of the pumping spaces which is curved in an inward direction relative to the interior of the hub in the area where the vane is mounted on the hub (see drawings).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-7, 9, 11 and 12 are rejected under 35 U.S.C. 103(a) as unpatentable over Weis (US 3,704,868) in view of Wissman (US 4,722,664). Regarding claim 1, Weis ('868) discloses an apparatus comprising a driven impeller (30)

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surrounded by a housing (11) and including a number of individual curved vanes (32) freely mounted on the shaft hub of an impeller so that pumping spaces on the front side and rear side of the vanes of the impeller are flowed through uniformly (see Fig. 2).

PFA coating is not disclosed. Wissman ('664) teaches a PFA coating (see col. 2, lines 6-19). It is considered that it would have been obvious to one of ordinary skill in the art to have provided that impeller of Weis ('868) with a PFA coating, because Wissman ('664) explains that such a coating provides the benefit of corrosion resistance (see col. 1, lines 5-19). Regarding claims 2 and 3 the vanes of Weis ('868) emanate from the hub at an angle of 90 degrees and are spaced apart by 90 degrees as seen in Fig. 2 and col. 3 lines 1-5. Regarding claim 5, the curved vanes bounding the pumping spaces have the same path of curvature on the front and rear side (see Fig. 2).

Regarding claim 6, the curved vanes have the same radius of curvature on the front and rear side (see Fig. 2). Regarding claim 7, the center line of the curved vanes on the impeller describe a segment of a circle between the enveloping curve and the center of the hub (see col. 2, line 63 to col. 3 line 5). Regarding claim 9, the ratio of the vane width to the vane thickness is greater than one (see col. 3, lines 26-38 and col. 4, lines 26-32). Regarding claim 11, Weis ('868) discloses an impeller (30) driven by a drive (19) and a number of curved vanes (32) freely mounted on the hub of the impeller, so that pumping spaces on the front side and rear side of the vanes of the impeller are flowed through uniformly (see Fig. 2). PFA coating is not disclosed. Wissman ('664) teaches a PFA coating (see col. 2, lines 6-19). It is considered that it would have been obvious to one of ordinary skill in the art to have provided that impeller of Weis ('868)

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with a PFA coating, because Wissman ('664) explains that such a coating provides the benefit of corrosion resistance (see col. 1, lines 5-19). Regarding claim 12, Weis ('868) discloses an impeller (30) driven by a drive (19) and a number of vanes (32) being mounted in the region of the hub and surrounded by a housing (11), wherein a number of individual curved vanes (32) are freely mounted on the hub of an impeller, so that pumping spaces on the front side and rear side of the curved vanes of the impeller are flowed through uniformly (see Fig. 2). PFA coating is not disclosed. Wissman ('664) teaches a PFA coating (see col. 2, lines 6-19). It is considered that it would have been obvious to one of ordinary skill in the art to have provided that impeller of Weis ('868) with a PFA coating, because Wissman ('664) explains that such a coating provides the benefit of corrosion resistance (see col. 1, lines 5-19).

5. Claims 1-3, 5-8, 11 and 12 are rejected under 35 U.S.C. 103(a) as unpatentable over Jost (US 1,646,913) in view of Wissman (US 4,722,664). Regarding claim 1, Jost ('913) discloses an apparatus comprising a driven impeller (52) surrounded by a housing (1) and including a number of vanes being mounted in the region of the hub (see Fig. 3) wherein a number of individual curved vanes are freely mounted on the shaft hub of an impeller (52) so that pumping spaces on the front side and rear side of the vanes of the impeller are flowed through uniformly (see Figs. 1 and 3). PFA coating is not disclosed. Wissman ('664) teaches a PFA coating (see col. 2, lines 6-19). It is considered that it would have been obvious to one of ordinary skill in the art to have provided that impeller of Jost ('913) with a PFA coating, because Wissman ('664) explains that such a coating provides the benefit of corrosion resistance (see col. 1,

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lines 5-19). Regarding claims 2 and 3 the vanes of Jost ('913) emanate from the hub at an angle of 90 degrees and are spaced apart by 90 degrees as seen in Fig. 3.

Regarding claim 5, the curved vanes bounding the pumping spaces have the same path of curvature on the front and rear side (see Fig. 3). Regarding claim 6, the curved vanes have the same radius of curvature on the front and rear side (see Fig. 3).

Regarding claim 7, the center line of the curved vanes on the impeller describe a segment of a circle between the enveloping curve and the center of the hub (see Fig. 3).

Regarding claim 8, the edges of the curved vanes of the impeller are of a rounded form (see Figs. 1 and 3). Regarding claim 11, Jost ('913) discloses an impeller (52) driven by a drive (47,48,49) and a number of vanes being mounted in the region of the hub (see Figs. 1 and 3), wherein a number of individual curved vanes are freely mounted on the hub of the impeller (see Figs. 1 and 3), so that pumping spaces on the front side and rear side of the vanes of the impeller are flowed through uniformly (see Figs. 1 and 3).

Regarding claim 12, Jost ('913) discloses an impeller (52) capable of being driven by a drive (47,48,49) and a number of vanes being mounted in the region of the hub (see Figs. 1 and 3) and surrounded by a housing (1), wherein a number of individual curved vanes are freely mounted on the hub of an impeller, so that pumping spaces on the front side and rear side of the curved vanes of the impeller are flowed through uniformly (see Figs. 1 and 3).

6. Claims 1-3, 5-7 and 10-12 are rejected under 35 U.S.C. 103(a) as unpatentable over DiPlacido (US 3,390,004) in view of Wissman (US 4,722,664). Regarding claim 1, DiPlacido ('004) discloses an apparatus comprising a driven impeller (that having vanes

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10) surrounded by a housing (1) and including a number of curved vanes (10) freely mounted on the shaft hub of an impeller so that pumping spaces on the front side and rear side of the vanes of the impeller are flowed through uniformly (see Fig. 4). PFA coating is not disclosed. Wissman ('664) teaches a PFA coating (see col. 2, lines 6-19). It is considered that it would have been obvious to one of ordinary skill in the art to have provided that impeller of DiPlacido ('004) with a PFA coating, because Wissman ('664) explains that such a coating provides the benefit of corrosion resistance (see col. 1, lines 5-19). Regarding claims 2 and 3, the vanes of DiPlacido ('004) emanate from the hub at an angle of 90 degrees. Regarding claim 5, the curved vanes bounding the pumping spaces have the same path of curvature on the front and rear side (see Fig. 4). Regarding claim 6, the curved vanes have the same radius of curvature on the front and rear side (see Fig. 4). Regarding claim 7, the center line of the curved vanes on the impeller describe a segment of a circle between the enveloping curve and the center of the hub (see Fig. 4). Regarding claim 10, the enveloping curve of the impeller is surrounded by a spiral housing (1) (See Fig. 4). Regarding claim 11, DiPlacido ('004) discloses an impeller (that having vanes 10) driven by a drive (39) and a number of curved vanes (10) freely mounted on the hub of the impeller, so that pumping spaces on the front side and rear side of the vanes of the impeller are flowed through uniformly (see Fig. 4). PFA coating is not disclosed. Wissman ('664) teaches a PFA coating (see col. 2, lines 6-19). It is considered that it would have been obvious to one of ordinary skill in the art to have provided that impeller of DiPlacido ('004) with a PFA coating, because Wissman ('664) explains that such a coating provides the benefit of corrosion

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resistance (see col. 1, lines 5-19). Regarding claim 12, DiPlacido ('004) discloses an impeller (that having vanes 10) driven by a drive (3) and a number of curved vanes (10) freely mounted on the hub of an impeller, so that pumping spaces on the front side and rear side of the curved vanes of the impeller are flowed through uniformly (see Fig. 4). PFA coating is not disclosed. Wissman ('664) teaches a PFA coating (see col. 2, lines 6-19). It is considered that it would have been obvious to one of ordinary skill in the art to have provided that impeller of DiPlacido ('004) with a PFA coating, because Wissman ('664) explains that such a coating provides the benefit of corrosion resistance (see col. 1, lines 5-19).

7. Claims 1-3, 5-9, 11, 12 and 14-19 are rejected under 35 U.S.C. 103a as being obvious over Gallo (US 1,822,867). Gallo ('867) discloses an impeller having a shaft hub 1) and a number of individual curved vanes (2) freely mounted on the hub, to create pumping spaces on the front side and rear side of the curved vanes of the impeller, wherein each of the vanes has bevels in the region where the vane is mounted on the shaft (see Fig. 2), the bevels of adjacent vanes being formed to create a surface of the pumping spaces which is curved in an inward direction relative to the interior of the hub in the area where the vane is mounted on the hub (see drawings). PFA coating is not disclosed. Wissman ('664) teaches a PFA coating (see col. 2, lines 6-19). It is considered that it would have been obvious to one of ordinary skill in the art to have provided that impeller of Gallo ('867) with a PFA coating, because Wissman ('664) explains that such a coating provides the benefit of corrosion resistance (see col. 1, lines 5-19).

Response to Arguments

8. The relied upon references all relate to impellers and therefore are analogous art references.


9. Applicant makes remarks concern how the invention is intended to be used, for example, "for transporting a polymer dispersion" or for preventing deposits or for preventing undesirable shear. Applicant is reminded that "apparatus claims cover what a device *is*, not what a device *does*" *Hewlett-Packard Co. v. Bausch & Lomb Inc.* 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original). Also, "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" *Ex parte Masham* 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims" *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim" *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Sorkin whose telephone number is 571-272-1148. The examiner can normally be reached on 9:00 -5:30 Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David L. Sorkin
Primary Examiner
Art Unit 1723

DLS